REGULATION 9

TOXIC AIR CONTAMINANTS

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RULE 902 AIRBORNE CHROMIUM CONTROL MEASURE - EMISSIONS OF HEXAVALENT CHROMIUM FROM CHROME PLATING AND ANODIZING OPERATIONS

Adopted 07-17-89
(Amended 06-08-95)

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100 GENERAL

101 PURPOSE: To comply with Health and Safety Code Section 39666 by reducing hexavalent chromium emissions from plating and acid anodizing operations.

102 APPLICABILITY: This regulation shall apply to any new or existing chrome plating or chromic acid anodizing operation located in the Sacramento Valley, Mountain Counties, or Lake Tahoe Air Basin portion of Placer County.

200 DEFINITIONS: For the purpose of this section the following definitions shall apply:

201 AMPERE-HOURS: The integral of electrical current applied to a plating tank (amperes) over a period of time (hours).

202 ANTI-MIST ADDITIVE: A chemical which reduces the emission rate from the tank when added to and maintained in the plating tank.

203 CHROME: Metallic chrome.

204 CHROME PLATING: Either hard or decorative chrome plating.

205 CHROMIC ACID: An aqueous solution of chromium trioxide (CrO_3) or a commercial solution containing chromic acid, dichromic acid (H_2CrO_7) or trichromic acid ($H_2Cr_3O_{10}$).

206 CHROMIC ACID ANODIZING: The electrolytic process by which a metal surface is converted to an oxide surface coating in a solution containing chromic acid.

207 CHROMIUM: Hexavalent chromium.

208 CONTROL EQUIPMENT: Any device which reduces emissions from the emissions collection system.

209 DECORATIVE CHROME PLATING: The process of which chromium is electrodeposited from a solution containing compounds of chromium onto an object resulting in a chrome layer 1 micron (0.04 mil.) thick or less.

210 EMISSION FACTOR: The mass of chromium emitted during a test conducted in the emissions collection system in accordance with ARB Test Method 425 divided by the ampere-hours consumed by the tanks in the tested emissions collection system, expressed as the mass of chromium emitted per ampere-hour of electrical current consumed.

211 EMISSIONS COLLECTION SYSTEM: A device or apparatus used to gather chromium emissions from the surface of a chrome plating or chromic acid anodizing tank or tanks.

212 FACILITY: A business or businesses engaged in chrome plating or chromic acid anodizing which are owned or operated by the same person or persons and are located on the same parcel or on contiguous parcels.

213 FACILITY-WIDE EMISSIONS FROM HARD CHROME PLATING OR CHROMIC ACID ANODIZING: The total emissions from all hard chrome plating or chromic acid anodizing at the facility over a calendar year. Emissions shall be calculated as the sum of emissions from the emissions collection system at the facility. The emissions from an emissions collection system shall be calculated by multiplying the emission factor for that emissions collection system by the sum of ampere-hours consumed during that year for all of the tanks served by the emissions collection system.

214 HARD CHROME PLATING: The process by which chromium is electrodeposited from a solution containing compounds of chromium onto an object resulting in a chrome layer thicker than 1 micron (0.04 mil.).

215 PLATING TANK: Any container used to hold a chromium or chromic acid solution for the purposes of chrome plating or chromic acid anodizing.

216 UNCONTROLLED CHROMIUM EMISSIONS FROM THE HARD CHROME PLATING OR CHROMIC ACID ANODIZING FACILITY: The chromium emissions from the emissions collection systems at the facility calculated as if no control equipment is in use. For the purpose of determining compliance with this rule the uncontrolled chromium emissions shall be calculated using an emission factor based on tests conducted in accordance with ARB Test Method 425 or 14 mg/ampere-hour whichever is less.

300 STANDARDS

301 REQUIREMENTS FOR DECORATIVE CHROME PLATING FACILITIES: No person shall operate a decorative chrome plating tank unless an anti-mist additive is continuously maintained in the plating tank, or control equipment is installed and used in a manner which has been demonstrated to and approved by the district air pollution control officer as reducing chromium emissions by 95 percent or more relative to chromium emissions when an anti-mist additive is not maintained or control equipment is not installed and used.

302 REQUIREMENTS FOR HARD CHROME PLATING AND CHROMIC ACID ANODIZING FACILITIES:

302.1 The owners or operators of all hard chrome plating and chromic acid anodizing facilities shall maintain a continuous record of current integrated over time (ampere- hours) for all plating tanks for each collection system used in the hard chrome plating or chromic acid anodizing operations and shall by January 17, 1991, and upon request thereafter, submit the information to the Air Pollution Control Officer.

302.2 No person shall operate a plating tank for hard chrome plating or chromic acid anodizing unless the tank has an emissions collection system.

302.3 No person shall operate a hard chrome plating or chromic acid anodizing tank unless:

a. The chromium emissions from the emissions collection system serving the plating tank have been reduced by 95 percent or more of the uncontrolled chromium emissions or;

b. The chromium emissions from the emissions collection system serving the plating tank have been reduced to less than 0.15 milligrams (mg) of chromium per ampere-hour of electrical charge applied to the plating tank.

302.4 No person shall operate a hard chrome plating tank or chromic acid anodizing tank at a facility if facility-wide chromium emissions from hard chrome plating or chromic acid anodizing are greater than 2 pounds per year but less than 10 pounds per year, unless:

a. the chromium emissions from the emissions collection systems serving the plating tanks have been reduced by at least 99 percent of the

uncontrolled chromium emissions from the hard chrome plating or chromic acid anodizing facility, or;

b. the chromium emissions from the emissions collection systems are reduced to less than 0.03 mg of chromium per ampere-hour of electrical charge applied to the tanks.

302.5 No person shall operate a hard chrome plating or chromic acid anodizing tank at a facility if facility- wide chromium emissions from hard chrome plating or chromic acid anodizing are 10 pounds per year or greater, unless:

a. the chromium emissions from the emissions collection systems serving the plating tanks have been reduced by at least 99.8 percent of the uncontrolled chromium emissions from the hard chrome plating or chromic acid anodizing facility, or;

b. the chromium emissions from the emissions collection systems are reduced to less than 0.006 mg of chromium per ampere-hour electrical charge applied to the tanks.

400 ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE: Decorative Chrome Plating Facilities - No later than January 17, 1991, the owners or operators of existing decorative chrome plating tanks must comply with the provisions of Section 301.

402 COMPLIANCE SCHEDULE: Hard Chrome Plating and Chromic Acid Anodizing Facilities

402.1 No later than January 17, 1991, the owner or operator of a hard chrome plating or chromic acid anodizing facility subject to Sections 302.3 or 302.5 shall submit to the Air Pollution Control Officer an application for an Authority to Construct the equipment necessary to meet the requirements of Sections 302.2 and 302.3 and no later than January 17, 1992, the facility shall be in compliance with the requirements of Sections 302.2 and 302.3.

402.2 No later than January 17, 1992, the owner or operator of a hard chrome plating or chromic acid anodizing facility subject to Section 302.4 shall submit to the Air Pollution Control Officer an application for an Authority to Construct the equipment necessary to meet the requirements of Sections 302.2 and 302.4 and no later than July 17, 1992, the facility shall be in compliance with the requirements of Sections 302.2 and 302.4.

402.3 No later than January 17,1993, the owner or operator of a hard chrome plating or chromic acid anodizing facility subject to Section 302.5 shall submit to the Air Pollution Control Officer an application for an Authority to Construct the equipment necessary to meet the requirements of Section 302.5 and no later than July 17, 1993, the facility shall be in compliance with the requirements of Section 302.5.

500 MONITORING AND RECORDS

501 RECORDKEEPING: Maintenance records for the hexavalent chromium emissions from plating and acid anodizing operations, control equipment; and calibration records for the monitoring equipment. Such records shall be retained on site for a period of 24 months, and made available to the District upon request.

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RULE 903 ETHYLENE OXIDE CONTROL MEASURE FOR STERILIZERS AND AERATORS

Adopted 02-05-91

A. GENERAL

1. Applicability: Any person who owns or operates a sterilizer or an aerator must comply with this regulation.

2. The requirements set forth in Section C do not apply to any facility which treats materials in a sterilizer and which uses a total of 25 pounds or less of ethylene oxide per calendar year.

3. The District Hearing Board may grant an emergency variance from Items (a) and (c) in Table I of Section C, Standards, to a person who owns or operates an acute care facility if response to a local medical emergency requires increased operation of a sterilizer or aerator such that the requirements cannot be met.

   The demonstrated need for such increased operation shall constitute "good cause" pursuant to Health and Safety Code Section 42359.5. The emergency variance shall be granted in accordance with this section and any applicable District rule regarding the issuance of emergency variances for such occurrences, including the requirement that the emergency variance shall not remain in effect longer than 30 days; however, the emergency variance shall be granted only for the period of time during which increased operation of a sterilizer or aerator is necessary to respond to the local medical emergency.

B. DEFINITIONS

1. Acute Care Facility; means any facility currently licensed by the California Department of Health Services as a general acute care hospital (as defined in Title 22, CCR, Section 70005), or any military hospital.

2. Aeration: is the process during which residual ethylene oxide dissipates, whether under forced air flow, natural or mechanically assisted convection, or other means, from previously sterilized materials after the sterilizer cycle is complete.

3. Aeration-only Facility: means a facility which performs aeration on materials which have been sterilized with ethylene oxide at another facility.

4. Aerator: means any equipment or space in which materials previously sterilized with ethylene oxide are placed or remain for the purpose of aeration. An aerator is not any equipment or space in which materials that have previously undergone ethylene oxide sterilization and aeration can be handled, stored, and transported in the same manner as similar materials that have not been sterilized with ethylene oxide.

5. Aerator Exhaust Stream: means all ethylene oxide-contaminated air which is emitted from an aerator.

6. Back-draft Valve Exhaust Stream: is the air stream which results from collection of ethylene oxide-contaminated air which may be removed from the sterilizer through a back-draft valve or rear chamber exhaust system during unloading of the sterilized materials.

7. Control Device: means an article, machine, equipment, or contrivance which reduces the amount of ethylene oxide between its inlet and outlet and which is sized, installed, operated, and maintained according to good engineering practices, as determined by the District.

8. Control Efficiency: is the ethylene oxide (EtO) mass or concentration reduction efficiency of a control device, as measured with ARB Test Method 431 (Title 17, CCR, Section 94143) according to the source testing requirements herein, and expressed as a percentage calculated across the control device as follows:

$$\frac{\text{ɘEtO}_{in} - \text{ɘEtO}_{out}}{\text{ɘEtO}_{in}} \times 100 = \% \text{ Control Efficiency}$$

9. Date of Compliance: means the time from District adoption of regulations enacting this control measure until a facility must be in compliance with specific requirements of this rule.

10. District: means the Placer County Air Pollution Control District.

11. Ethylene Oxide (EtO): is a substance identified as a toxic air contaminant by the Air Resources Board in 17 CCR, Section 93000.

12. Facility: means any entity or entities which: own or operate a sterilizer or aerator, are owned or operated by the same person or persons, and are located on the same parcel or contiguous parcels.

13. Facility-Wide Pounds of Ethylene Oxide Used Per Year: is the total pounds of ethylene oxide used in all of the sterilizers at the facility during a one-year period.

14. Leak Free: refers to that state which exists when the concentration of sterilant gas measured 1 cm. away from any portion of the exhaust system of a sterilizer or aerator, during conditions of maximum sterilant gas mass flow, is less than:

    a. 30 ppm for sterilant gas composed of 12% ethylene oxide and 88% chlorofluorocarbon-12, by weight, and

    b. 10 ppm for other compositions of sterilant gas,

    as determined by ARB Test Method 21 (Title 17, CCR, Section 94124) using a portable flame ionization detector, or a non-dispersive infrared analyzer, calibrated with methane, or an acceptable alternative method or analytical instrument approved by the District. A chlorofluorocarbon-12 specific audible detector using a metal oxide semiconductor sensor shall be considered an acceptable alternative for exhaust systems carrying a sterilant gas mixture of ethylene oxide and chlorofluorocarbon-12.

15. Local Medical Emergency: means an unexpected occurrence in the area served by the acute care facility resulting in a sudden increase in the amount of medical treatments which require a significant increase in the operation of a sterilizer or aerator.

16. Sterilant Gas: means ethylene oxide or any combination of ethylene oxide and (an)other gas(es) used in a sterilizer.

17. Sterilizer: means any equipment in which ethylene oxide is used as a biocide to destroy bacteria, viruses, fungi, and other unwanted organisms on materials. Equipment in which ethylene oxide is used to fumigate foodstuffs is considered a sterilizer.

18. Sterilizer Cycle: means the process which begins when ethylene oxide is introduced into the sterilizer, includes the initial purge or evacuation after sterilization and subsequent air washes, and ends after evacuation of the final air wash.

19. Sterilizer Door Hood Exhaust Stream: is the air stream which results from collection of fugitive ethylene oxide emissions, by means of an existing hood over the sterilizer door, during the time that the sterilizer door is open after the sterilizer cycle has been completed.

20. Sterilizer Exhaust Stream: is all ethylene oxide-contaminated air which is intentionally removed from the sterilizer during the sterilizer cycle.

21. Sterilizer Exhaust Vacuum Pump: means a device used to evacuate the sterilant gas during the sterilizer cycle, including any associated heat exchanger. A sterilizer exhaust vacuum pump is not a device used solely to evacuate a sterilizer prior to the introduction of ethylene oxide.

C. STANDARDS

No person shall operate a sterilizer or aerator after the applicable date shown in column (d), Table I, unless all of the following requirements are satisfied:

1. There is no discharge of sterilizer exhaust vacuum pump working fluid to wastewater streams, and

2. The exhaust systems including, but not limited to, any piping, ducting, fittings, valves, or flanges, through which ethylene oxide-contaminated air is conveyed from the sterilizer and aerator to the outlet of the control device are leak-free, and

3. All of the control requirements shown in Table I below for the applicable control category are met; and

4. For facilities using more than 600 pounds of ethylene oxide per year, the back-draft valve is ducted to the control device used to control the sterilizer exhaust stream or the aerator exhaust stream; and

5. For facilities using more than 5,000 pounds of ethylene oxide per year, the sterilizer door hood exhaust stream is ducted to the control device used to control the aerator exhaust stream.

Table I

Control and Compliance Requirements

CONTROL CATEGORY	REQUIREMENTS			
	(a)	(b)	(c)	(d)
Facility-wide Pounds of Ethylene Oxide Used per Year	Exhaust Streams to be Controlled	Exhaust Streams to be Tested(%)	Control Efficiency	Date of Compliance (months)
Less than or equal to 25	None	None	None	None
More than 25 and less than or equal to 600	Sterilizer	Sterilizer	99.0	24
More than 600 and less than or equal to 5,000	Sterilizer Aerator Back-draft Valve	Sterilizer Aerator N/A*	99.9 95.0	18
More than 5,000	Sterilizer Aerator & Sterilizer Door Hood Back-draft Valve	Sterilizer Aerator	99.9 99.0 N/A* N/A	12
Aeration-Only Facilities	Aerator	Aerator	95.0	18

* Not Applicable

D. ADMINISTRATIVE REQUIREMENTS

The facility shall be in compliance with all provisions specified in Section C, Standards, no later than the date specified in column (d) of Table I.

1. Compliance of Ethylene Oxide Concentrations Below Detection: For the purpose of determining compliance with the control efficiency requirement shown in column (c) of Table I, Section C, if a reduction in the amount of ethylene oxide across the control device is demonstrated, but the control efficiency cannot be affirmatively demonstrated because the concentration of ethylene oxide measured in the outlet of the control device is below 0.2 parts per million ethylene oxide, the facility shall be considered to be in compliance with this requirement.

2. Alternate Compliance Date: The owner or operator of any facility which uses more than 600 pounds of ethylene oxide per year may choose this alternate compliance option which addresses the date for compliance with the requirements of Section C. If this compliance option is chosen, the owner or operator shall:

   a. Within 3 months of the date of District adoption of regulations enacting this control measure, comply with the requirements shown in Subsections C.1 and

C.2 and demonstrate a control efficiency of 99.9% for the sterilizer exhaust stream, in accordance with the source testing requirements set forth in Subsection E.3; and

b. Within 6 months of the date of District adoption of regulations enacting this control measure, submit to the District a plan to discontinue operation of all sterilizers and aerators or comply with the District requirements to submit a plan to comply with the requirements of Subsections C.3, C.4, and C.5, and

c. Within 18 months of the date of District adoption of regulations enacting this control measure, do one of the following:

(1) Demonstrate to the satisfaction of the District that operation of all sterilizers and aerators at the facility has been permanently discontinued; or

(2) Demonstrate compliance with the requirements of Subsections C.3, C.4, and C.5, in accordance with the source testing provisions set forth in Subsection E.3.

E. MONITORING AND RECORDS

1. Notification: Any person subject to this regulation must provide the District with the following information, in writing, within 30 days of the date of District adoption:

a. The name(s) of the owner and operator of the facility, and

b. The location of the facility, and

c. The number of sterilizers and aerators at the facility, and

d. An estimate of the total pounds of ethylene oxide and sterilant gas used by the facility, in all sterilizers, during the previous calendar year, as determined by a method approved by the District.

The District may exempt a source from this requirement if the District maintains current equivalent information on the source.

2. Reporting: Any person who owns or operates a sterilizer shall furnish a written report to the District annually on the date specified by the District, or, at the District's discretion, shall maintain such a report and make it available to the District upon request. This report shall include one of the following, as determined by the District:

a. The number of sterilizer cycles and the pounds of ethylene oxide used per cycle for each sterilizer during the reporting period, as determined by a method approved by the District; or

b. The total pounds of sterilant gas and the total pounds of ethylene oxide purchased, used, and returned in the previous calendar year, as determined by a method approved by the District.

3. Source Testing: Source testing shall be conducted according to ARB Test Method 431 (Title 17, CCR, Section 94143) and the method evaluations cited therein or an acceptable source test method approved by the Executive Officer of the Air Resources Board. Specific requirements for application are given below:

a. The test on a control device for a sterilizer exhaust stream shall be run with a typical load, as approved by the District, in the sterilizer.

b. The test on a control device for an aerator exhaust stream shall be run with a typical load, as approved by the District, in the aerator.

c. The inlet and outlet of the control device shall be sampled simultaneously during testing to measure the control efficiency.

d. The efficiency of each control device shall be determined under conditions of maximum ethylene oxide mass flow to the device, under normal operating conditions. To measure the control efficiency of the control device on the sterilizer exhaust stream, sampling shall be done during the entire duration of the first sterilizer evacuation after ethylene oxide has been introduced. To measure the control efficiency of the control device on an aerator exhaust stream with a constant air flow, sampling shall be done during a period of at least 60 minutes, starting 15 minutes after aeration begins. To measure the control efficiency of the control device on an aerator exhaust stream with a non-constant air flow, sampling shall be done during the entire duration of the first aerator evacuation after aeration begins.

e. There shall be no dilution of the air stream between the inlet and outlet test points during testing.

RULE 904 AIRBORNE TOXIC CONTROL MEASURE - HEXAVALENT CHROMIUM EMISSIONS FROM COOLING TOWERS

Adopted 05-07-91

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100 GENERAL

101 PURPOSE: The purpose of this rule is to reduce emissions of hexavalent chromium from cooling towers by eliminating chromium based circulating water treatment programs, pursuant to Title 17, California Code of Regulations, Section 93103. Hexavalent chromium containing compounds may be ingredients of cooling tower circulating water treatment chemicals.

102 APPLICABILITY: This rule shall apply to any person who owns or operates, or who plans to build, own, or operate, a cooling tower.

103 EXEMPTION, DISCONTINUED CHROMATE TREATMENT: Section 502 does not apply to cooling tower operators who have not used hexavalent chromium for water treatment since November 3, 1990, or cooling tower circulating water was never treated with hexavalent chromium containing compounds, and who have met all petition for exemption requirements of Section 404.

104 EXEMPTION, WOODEN COOLING TOWERS: Operators of cooling towers having wooden components exposed to circulating water may petition for a temporary exemption from the Section 302 hexavalent chromium concentration limitation for the period from the compliance date, November 3, 1991, up to May 3, 1992, providing that the petition for exemption requirements of Section 403 are met.

200 DEFINITIONS

201 COOLING TOWER: Any device which evaporates circulating water to remove heat from a process, a building, or a refrigerator, and puts the heat into the ambient air.

202 HEXAVALENT CHROMIUM/CHROMATE: Hexavalent chromium and chromate are identified toxic air contaminates and are a cancer-causing (toxic) substance existing as part of various inorganic chromate compounds, for example, sodium dichromate or lead chromate.

203 WATER TREATMENT CHEMICALS: Any combination of chemicals added to cooling tower water including tracers, corrosion inhibitors, antiscalants, dispersants, biocides.

300 STANDARDS

301 PROHIBITION ON HEXAVALENT CHROMIUM/CHROMATE USE: Effective November 3, 1991, hexavalent chromium containing compounds shall not be added to cooling tower circulating water, and

302 LIMITATION ON CIRCULATING WATER HEXAVALENT CHROMIUM CONCENTRATIONS: Effective November 3, 1991, a cooling tower shall not be operated with a circulating water hexavalent chromium concentration greater than or equal to **0.15 milligrams per liter**.

400 ADMINISTRATIVE REQUIREMENTS

401 EXISTING COOLING TOWERS, GENERAL REQUIREMENTS: For cooling towers existing on May 7, 1991, the owner or operator shall notify the District in accordance with Section 402, and no later than November 3, 1991, each cooling tower shall comply with Section 301 and Section 302 requirements. Owners or operators of cooling towers with wooden components exposed to circulating water shall comply with the limitation of Section 302, unless a temporary exemption has been granted in accordance with Section 403.

402 EXISTING COOLING TOWERS, NOTIFICATION: No later than August 5, 1991, each person who owns or operates a cooling tower shall submit the following information, in writing, to the District for each cooling tower:

402.1 A declaration that a cooling tower is owned or operated, and

402.2 The location of the cooling tower, and

402.3 A statement as to whether or not hexavalent chromium or hexavalent chromium containing compounds is used or was used in the cooling tower, and

402.4 If hexavalent chromium or hexavalent chromium containing compounds are used, the date by which such use will cease.

403 PETITION FOR EXEMPTION, WOODEN COOLING TOWERS: Owners or operators of cooling towers existing on May 7, 1991 with wooden components that are exposed to circulating water may petition the APCO for exemption from the Section 302 hexavalent chromium concentration limit of 0.15 milligrams per liter of circulating water for a period of up to six months from the compliance date of November 3, 1991. The following requirements must be met for the temporary exemption to be granted:

403.1 The District must be notified in writing that the cooling tower has wooden components exposed to circulating water, and

403.2 The owner or operator complies with all other requirements of this rule, and

403.3 The circulating water of the cooling tower is tested in accordance with Section 502 monthly and results are reported to the District.

403.4 Testing shows a decrease in the hexavalent chromium concentrations in circulating water each month.

403.5 Hexavalent chromium concentrations in circulating water shall not exceed 8 milligrams hexavalent chromium per liter of circulating water.

404 PETITION FOR EXEMPTION FROM TEST REQUIREMENTS, DISCONTINUED CHROMATE TREATMENT: The requirements of Section 502 apply to any person who owns or operates a cooling tower existing on or prior to May 7, 1991, with the following exception:

404.1 Hexavalent chromium has not been used in cooling tower water treatment since November 3, 1990, or

404.2 Hexavalent chromium has never been used in water treatment for the cooling tower, and

404.3 Such hexavalent chromium cessation of use or non-use is demonstrated by written certification, signed by a company officer, that hexavalent chromium containing compounds have not been used in the year immediately before the compliance date (November 3, 1991).

405 NEW COOLING TOWER CONSTRUCTION, NOTIFICATION: No later than 90 days prior to operation of a newly constructed cooling tower, the owner or operator shall provide the following information in writing for each cooling tower:

405.1 The name and address of the owner or operator of the cooling tower, and

405.2 The location of the new cooling tower, and

405.3 The date that operation of the cooling tower is planned to commence.

500 MONITORING AND RECORDS

501 DETERMINATION OF HEXAVALENT CHROMIUM IN CIRCULATING WATER: Samples of circulating water shall be analyzed for hexavalent chromium as prescribed by American Public Health Method 312B or an equivalent method, as approved by the APCO, and the results reported to the District within 30 days of the date testing is conducted.

502 TESTING REQUIREMENTS: Unless a petition for exemption from testing has been made to, and granted by, the APCO in accordance with Section 403 prior to November 3, 1991, testing of the cooling tower circulating water shall be conducted and reported as specified in Section 501:

502.1 Frequency of Testing: At least one test of cooling tower circulating water hexavalent chromium concentration shall be conducted and the results reported to the District prior to November 3, 1991:

a. Additional tests shall be conducted and the results reported every six months thereafter.

b. If a temporary exemption from Section 302 limitation has been granted, then testing shall be conducted and reported monthly in accordance with Section 403 and Section 104.

502.2 Termination of Testing: The testing requirements of this rule for a cooling tower end when two consecutive required tests have results showing concentrations of hexavalent chromium to be less than 0.15 milligrams per liter of circulating water. Testing may be required at any time by the District, if the District has information that the circulating water may contain hexavalent chromium.

503 RECORDKEEPING: Any person subject to Sections 501 and 502 shall maintain records of the results of all required tests of circulating water for two (2) years and submit them to the District when requested.

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RULE 905 AIRBORNE TOXIC CONTROL MEASURE
ASBESTOS - CONTAINING SERPENTINE ROCK IN SURFACING APPLICATIONS

Adopted 05-07-91
(Amended 10-19-93)

100 GENERAL

101 PURPOSE: The purpose of this rule is to comply with Title 17 and Title 26, California Code of Regulations regarding the use of serpentine material for surfacing.

102 EXEMPTION, SAND AND GRAVEL OPERATIONS: The provisions of Section 302 through Section 305 shall not apply to sand and gravel operations.

103 EXEMPTION, ROADS, MINES AND DEPOSITS: The provisions of Section 301 shall not apply to roads located at serpentine quarries, asbestos mines, or mines located in serpentine deposits.

104 EXEMPTION, ROAD MAINTENANCE: The provisions of Section 301 shall not apply to maintenance operations on any existing road surfaces, or at the construction of new roads in serpentine deposits, as long as no additional asbestos-containing serpentine material is applied to the road surface.

105 EMERGENCY ROAD REPAIRS: The Air Pollution Control Officer may issue a temporary exemption from the requirements of Section 301 to an applicant who demonstrates that a road repair is necessary due to a landslide, flood, or other emergency and that the use of material other than serpentine is not feasible for this repair. The Air Pollution Control Officer shall specify the time during which such exemption shall be effective, provided that no exemption shall remain in effect longer than six (6) months.

106 BITUMINOUS AND CONCRETE MATERIALS: The provisions of Section 300 shall not apply to serpentine material that is an integral part of bituminous concrete, portland cement concrete, bituminous surface, or other similar cemented materials.

107 EXEMPTIONS OTHER: The provisions of Section 301 shall not apply to landfill operations other than the surfacing of public-access roads used by vehicular traffic.

200 DEFINITIONS

201 AGGREGATE: A mixture of mineral fragments, sand, gravel, rocks, or similar minerals.

202 ALLUVIAL DEPOSIT: Any deposit of sediments laid down by running water including but not limited to streams and rivers.

203 ARB TEST METHOD 435: The test method specified in Title 17, California Code of Regulations, Section 94147.

204 ASBESTOS: Asbestiforms of the following hydrated minerals; chrysotile (fibrous serpentine), crocidolite (fibrous riebecktite), amosite (fibrous cummingtonite--grunerite), fibrous tremolite, fibrous actinolite, and fibrous anthophyllite.

205 ASBESTOS CONTAINING SERPENTINE MATERIAL: Serpentine material that has an asbestos content greater than five percent (5.0%) as determined by ARB Test Method 435.

206 **RECEIPTS:** Any written acknowledgment that a specified amount of serpentine material was received, delivered, or purchased. Receipts include but are not limited to, bills of sale, bills of lading, and notices of transfer.

207 **ROAD SURFACE:** The traveled way of a road and any shoulder which extends up to 10 feet from the edge of the traveled way.

208 **SAND AND GRAVEL OPERATION:** Any aggregate producing facility operating in alluvial deposits.

209 **SERPENTINE:** Any form of hydrous magnesium silicate minerals--including, but not limited to, antigorite, lizardite, and chrysotile.

210 **SERPENTINE MATERIAL:** Any material that contains at least ten percent (10%) serpentine as determined by a registered geologist. The registered geologist must document precisely how the serpentine content of the material in question was determined.

211 **SURFACING:** The act of covering any surface used for purposes of pedestrian, vehicular, or non-vehicular travel including, but not limited to, roads, road shoulders, streets, alleys, lanes, driveways, parking lots, playgrounds, trails, squares, plazas, and fairgrounds.

300 STANDARDS REQUIREMENTS FOR USE OR SALE OF ASBESTOS--CONTAINING SERPENTINE MATERIAL

301 No person shall use or apply serpentine material for surfacing in California unless the material has been tested using ARB Test Method 435 and determined to have an asbestos content of five percent (5.0%) or less. A written receipt or other record documenting the asbestos content shall be retained by any person who uses or applies serpentine materials, for a period of at least seven years from the date of use or application, and shall be provided to the Air Pollution Control Officer or his designee for review upon request.

302 Any person who sells, supplies, or offers for sale serpentine material in the District shall provide with each sale or supply a written receipt containing the following statement: "Serpentine material may have an asbestos content greater than five percent (5.0%). It is unlawful to use serpentine material for surfacing unless the material has been tested and found to contain less than or equal to five percent (5.0%) asbestos. All tests for asbestos content must use California Air Resources Board Test Method 435, and a written record documenting the test results must be retained for at least seven years if the material is used for surfacing."

303 No person shall sell, supply, or offer for sale serpentine material for surfacing in the District unless the serpentine material has been tested using ARB Test Method 435 and determined to have an asbestos content of five percent (5.0%) or less. Any person who sells, supplies, or offers for sale serpentine material that he or she represents, either orally or in writing, to be suitable for surfacing or to have an asbestos content that is five percent (5.0%) or less, shall provide to each purchaser or person receiving the serpentine material a written receipt which specifies the following information: the amount of serpentine material sold or supplied; the dates that the serpentine material was produced, sampled, tested, and supplied or sold; and the asbestos content of the serpentine material as measured by ARB Test Method 435. A copy of the receipt must, at all times, remain with the serpentine material during transit and surfacing.

304 Any person who sells, supplies, or offers for sale serpentine material, shall retain for a period of at least seven years from the date of sale or supply copies of all receipts and copies of any analytical test results from asbestos testing of the serpentine material. All

receipts and test results shall be provided to the Air Pollution Control Officer or his designee for review upon request.

305 If ARB Test Method 435 has been used to perform two or more tests on any one volume of serpentine material, whether by the same or a different person, the arithmetic average of these test results shall be used to determine the asbestos content of the serpentine material.

400 ADMINISTRATIVE REQUIREMENTS

401 Any person subject to this rule shall comply with all the requirements upon May 7, 1991.

500 MONITORING AND RECORDS

501 ENFORCEMENT: These rules and regulations shall be enforced by the APCO under authority of California Health and Safety Code Sections 40001, 40702, 40752, and all officers empowered by Section 40120.

502 PENALTY: Penalties shall be assessed as stated in Health and Safety Code Sections 39674, 42400, and 42400.1.

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RULE 906 AIRBORNE TOXIC CONTROL MEASURE
MEDICAL WASTE INCINERATORS

Adopted 02-04-92

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100 GENERAL

101 PURPOSE: The purpose of this rule is to comply with Section 93104, Title 17, California Code of Regulations, for the control of the emission of Dioxins from medical waste incinerators and to establish minimum requirements for operation. Emission limitations are established for hydrochloric acid and particulate matter from medical waste incinerators.

102 APPLICABILITY: Any person who owns or operates a medical waste incinerator shall comply with the requirements of this Rule.

103 EXEMPTION, CREMATORIA: This control measure shall not apply to those incinerators which are exclusively crematoria of human or animal remains.

200 DEFINITIONS

201 ARB: means the State of California Air Resources Board.

202 ARB TEST METHOD 1: means the test method specified in Title 17, California Code of Regulations, Section 94101, Sample and Velocity Traverses for Stationary Sources.

203 ARB TEST METHOD 2: means the test method specified in Title 17, California Code of Regulations, Section 94102, Determination of Stack Gas Velocity and Volumetric Flow Rate.

204 ARB TEST METHOD 3: means the test method specified in Title 17, California Code of Regulations, Section 94103, Gas Analysis for Carbon Dioxide, Oxygen, Excess Air, and Dry Molecular Weight.

205 ARB TEST METHOD 4: means the test method specified in Title 17, California Code of Regulations, Section 94104, Determination of Moisture Content in Stack Gases.

206 ARB TEST METHOD 5: means the test method specified in Title 17, California Code of Regulations, Section 94105, Determination of Particulate Matter Emissions from Stationary Sources.

207 ARB TEST METHOD 421: means the test method specified in Title 17, California Code of Regulations, Section 94131, Determination of Hydrochloric Acid Emissions from Stationary Sources.

208 ARB TEST METHOD 428: means the test method specified in Title 17, California Code of Regulations, Section 94139, Determination of Polychlorinated Dibenzo-p-Dioxin (PCDD), Polychlorinated Dibenzofuran (PCDF), and Polychlorinated Biphenyl (PCB) Emissions from Stationary Sources.

209 CONTROL EQUIPMENT: means any device which reduces emissions from medical waste incinerators.

210 DIOXINS: means dibenzo-p-dioxins and dibenzofurans chlorinated in the 2, 3, 7, and 8 positions and containing 4, 5, 6, or 7 chlorine atoms and is expressed as 2, 3, 7, 8 tetrachlorinated dibenzo-para-dioxin equivalents using current California Department of Health Services toxic equivalency factors.

211 DISTRICT: means the Placer County Air Pollution Control District.

212 EXCESS AIR: means the air supplied in excess of that necessary to completely burn compounds.

213 FACILITY: means every building, structure, appurtenance, installation, or improvement located on land which is under the same or common ownership or operation, and is on one or more contiguous or adjacent properties.

214 MEDICAL FACILITIES: means medical and dental offices, clinics and hospitals, skilled nursing facilities, research facilities, research laboratories, clinical laboratories, all unlicensed and licensed medical facilities, clinics and hospitals, surgery centers, diagnostic laboratories, and other providers of health care. For the purposes of this Rule, medical facilities include providers of veterinary services.

215 MEDICAL WASTE INCINERATOR: means all of the furnaces or other closed fire chambers that are located at a facility and used to dispose of waste generated at medical facilities by burning.

216 MULTIPLE CHAMBER STARVED AIR INCINERATOR: or Controlled Air Incinerator, means an incinerator which is designed to burn waste in two independent chambers:

216.1 Primary Chamber: where the majority of waste volume reduction occurs operated at sub-stoichiometric conditions

216.2 Secondary Chamber: operates at excess air conditions; where destruction of gas-phase combustion products occurs. Passage ports, ducts, flues, chimneys, or stacks with burners shall not be considered Controlled Air secondary chambers unless the combustion zone exhibits design measures for the retention of the gas stream in the chamber, turbulence or mixing, and the availability of excess air, as determined by engineering analysis.

217 STOICHIOMETRIC AIR: means an amount of air (theoretical combustion air) theoretically required for the complete combustion of compounds with total depletion of oxygen.

218 SUB-STOICHIOMETRIC AIR: means an amount of air (theoretical combustion air) less than that required for the complete combustion of compounds.

219 UNCONTROLLED EMISSIONS: means the dioxins emissions measured from the incinerator at a location downstream of the last combustion chamber, but prior to the air pollution control equipment.

220 WASTE: means all discarded putrescible and nonputrescible solid, semisolid, and liquid materials, including garbage, trash, refuse, paper, rubbish, food, ashes, plastics, industrial wastes, demolition and construction wastes, equipment, instruments, utensils, appliances, manure, and human or animal solid and semi-solid wastes.

221 WASTE CHARGING RATE: means the amount of waste charged or fed into the incinerator per unit of time, usually expressed in terms of pounds per hour or kilograms per hour.

300 STANDARDS

301 EMISSION LIMITATIONS: No person shall operate a medical waste incinerator unless:

301.1 The dioxins emissions have been reduced to 10 nanograms or less per kilogram of waste burned.

301.2 Hydrochloric acid emissions do not exceed 30 ppmdv, corrected to 12% carbon dioxide (CO_2), for any 1 hour emission rate.

301.3 Particulate Matter emissions do not exceed 0.01 grains per dry cubic foot of gas at standard conditions, corrected to 12% carbon dioxide (CO_2). The concentration limit shall apply to filterable (front half) particulate matter measured using ARB Test Method 5.

302 OPERATING REQUIREMENTS: No person shall operate a medical waste incinerator unless the incinerator and the control equipment required to comply with the limitations of Section 301 are installed and used in a manner which has been demonstrated to and approved by the District Air Pollution Control Officer to meet the following requirements:

302.1 The flue gas temperature at the outlet of the control equipment, or the outlet of incinerator stack if no control equipment installed, shall not exceed 300 degrees Fahrenheit, unless it has been demonstrated to, and approved in writing by, both the ARB and the District Air Pollution Control Officer that lower emissions are achieved at a higher outlet temperature; and

302.2 For a single chamber incinerator, the combustion chamber shall be maintained at no less than 1800 degrees ($\pm$ 200 degrees) Fahrenheit. Single chamber medical waste incinerator not in operation on January 13, 1992 are prohibited.

302.3 For a multiple chamber starved air incinerator, the primary combustion chamber shall be maintained at no less than 1400 degrees Fahrenheit, and the secondary chamber shall be maintained at no less than 1800 degrees ($\pm$ 200 degrees) Fahrenheit. No waste shall be fed into the incinerator during start-up and shut-down unless the incinerator combustion chamber(s) are within the required temperature range.

302.4 The furnace design shall provide for a residence time for combustion gas of at least one second. Residence time shall be calculated using the following equation:

$$\text{Residence Time} = \frac{V}{Q_C}$$

Where:

V = means the volume, as expressed in cubic feet, from the point in the incinerator where the maximum temperature has been reached until the point where the temperature has dropped to $1600^{o}F$.

Q_C = means the combustion gas flow through V, as expressed in actual cubic feet per second, which is measured according to ARB Test Method 2, after adjusting the measured flow rate to the maximum combustion chamber temperature (T_C) by using T_C instead of T_{STD} in the ARB Test Method 2 calculation for Q_C.

The volumetric flow rate measured at the sampling points must be adjusted to chamber pressures.

Alternative methods may be used if conditions for determining the combustion gas flow rate by Method 2 are unacceptable. The determination shall be equivalent to, and within the guidelines of, ARB Test Method 2 and at the discretion of the Air Pollution Control Officer.

T_C = means the maximum temperature, in degrees Fahrenheit, that has been reached in the incinerator.

302.5 The discharge of emissions from the combustion chamber, is solely through the control equipment, or solely through the incinerator stack if no control equipment is installed.

303 ASH HANDLING REQUIREMENTS: No person shall operate a medical waste incinerator unless the bottom ash, fly ash and scrubber residuals are handled and stored in a manner that prevents entrainment into ambient air.

304 REQUIRED ANCILLARY EQUIPMENT: No person shall operate a medical waste incinerator unless the following equipment is installed and maintained in an operable condition:

304.1 A continuous data recording system as specified in Section 501.

304.2 Primary and secondary combustion chamber temperature indication.

304.3 Equipment for determining and recording the weight of waste charged to the incinerator.

304.4 An automated ram waste feeder with airlock, for batch fed incinerators, such that no ingress of external air occurs during the process of feeding waste to the primary combustion chamber.

400 ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE:

401.1 No later than 90 days after January 13, 1992, the owner or operator of a medical waste incinerator shall submit to the District Air Pollution Control Officer an application for an authority to construct the equipment necessary to meet the requirements of Section 301, and

401.2 No later than 15 months after January 13, 1992, the owner or operator of a medical waste incinerator shall be in compliance with this regulation.

402 DETERMINATION OF COMPLIANCE: For purposes of demonstrating compliance with the emission limits of Section 301 of this Rule the owner or operator of a medical waste incinerator shall conduct the following source tests in the manner specified in Section 502:

402.1 A minimum of two annual source tests for the dioxins stack emissions using ARB Test Method 428, for medical waste incinerators that incinerate more than 25 tons of waste per year . Annual source tests shall be conducted until at least two consecutive tests demonstrate compliance. The high resolution mass spectrometry option of ARB Test Method 428 shall be used.

402.2 One initial source test for stack Dioxin emissions, using ARB Test Method 428, for medical waste incinerators that incinerate 25 tons or less of waste per year. The high resolution mass spectrometry option of ARB Test Method 428 shall be used.

402.3 One initial source test for stack Hydrochloric Acid emissions using ARB Test Method 421.

402.4 One initial source test for stack particulate matter emissions using ARB Test Methods 1 through 5.

Further source testing may be required by the Air Pollution Control Officer in accordance with Rule 507, Provision of Sampling and Testing Facilities.

403 UPSET NOTIFICATION: Any violation, malfunction, or upset condition on the incinerator, the air pollution control equipment, or the continuous data recording system shall be reported to the District within 1 hour of occurrence or by 9:00 AM the next business day if the malfunction occurs outside normal business hours and the District does not maintain a radio room or an answering machine.

404 SHUTDOWN NOTIFICATION: The owner or operator of a medical waste incinerator who intends to permanently shut down operation of the incinerator shall notify the District of the shutdown date within 90 days after January 13, 1992. The shutdown date shall be no later than six months after January 13, 1992.

405 OPERATOR CERTIFICATION: No person shall operate a medical waste incinerator unless each individual who operates or maintains the incinerator obtains either a certificate of training in medical waste incineration issued by the American Society of Mechanical Engineers within nine months of the commencement of the training program, or equivalent training as determined by the Air Pollution Control Officer. Copies of the training certificates for the operators and maintenance engineers shall be submitted to the District and the original certificates shall be available for inspection at the facility with the permit to operate.

500 MONITORING AND RECORDS

501 MONITORING: The owner or operator of a medical waste incinerator shall maintain a continuous data recording system which provides for each day of operation continuous recording of:

501.1 Primary and secondary combustion chamber temperatures;

501.2 Carbon monoxide emissions;

501.3 Hourly waste charging rates;

501.4 The opacity of stack emissions or other indicator of particulate matter which is approved by the District Air Pollution Control Officer; and

501.5 Key operating parameters of the air pollution control equipment, as specified by the Air Pollution Control Officer.

502 TEST REQUIREMENTS:

502.1 Test Plan: At least sixty (60) days prior to the planned conduct of testing, a written test plan (two copies) detailing the test methods and procedures to be used shall be submitted for approval by the Air Pollution Control Officer. The plan shall cite the test methods to be used for the determination of compliance with the emission limitations of this Rule, including any proposed use of alternate test methods. The plan shall provide the proposed procedures for the characterization of the representative waste to be burned during testing.

502.2 Test Performance and Reporting: For purposes of determining compliance with Section 301 of this Rule, the source testing shall be conducted at the stack. Information regarding the composition (moisture content, heating value in British Thermal Units, and amount of the total waste, by weight percent, that is infectious, pathological, hazardous, or radioactive and remaining waste which is paper or cardboard, plastics, glass, wet garbage) and feed rate of the waste and auxiliary fuel charged during the source test shall be provided with the test results. The Air Pollution Control Officer can require additional necessary information regarding the composition of the waste. Source testing shall be conducted at the maximum waste firing capacity ($\pm$ 10 percent) allowed by the air

district permit. A copy of all source test results conducted for purposes of demonstrating compliance with this rule shall be provided to the ARB at the same time that it is provided to the District.

503 RECORDKEEPING: Maintenance records for the incinerator, control equipment, and monitoring equipment; and calibration records for the monitoring equipment. Such records shall be retained on-site for a period of 24 months, and made available to the District upon request.